AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A communication system for mobile platforms, comprising:

a first mobile platform including a first transceiver that is assigned a first Internet Protocol (IP) address;

a second mobile platform including a second transceiver that is assigned a second IP address; and

a ground station adapted to:

transmit a forward link that contains an entire first IP packet having a first information data rate, said first IP packet modulated **[[**by a**]]** with code division multiple access (CDMA) coding in combination with a first variable length orthogonal (VLO) ~~spreader using a first VLO~~ code such that said ~~first transceiver is operated approximately at a saturation point of a first transceiver amplifier~~ entire first IP packet is relayed, via said forward link, from a ground station to said first mobile platform through a selected channel of a satellite having a transceiver amplifier operating approximately at a saturation point of said amplifier, and

transmit said forward link concurrently containing an entire second IP packet simultaneously modulated **[[**by the**]]** with CDMA coding in combination with a second VLO ~~spreader using a second VLO~~ code such that said ~~second transceiver is operated approximately at a saturation point of a second transceiver amplifier, wherein said first and second IP packet data have different information data rates~~ entire second IP packet is relayed, via said forward link, from said ground station to said second mobile platform through said selected satellite channel with said satellite transceiver operating approximately at said saturation point~~; and~~

~~a satellite that relays said forward link from said ground station to said first and second mobile platforms~~.

2. (original) The communications system of claim 1 wherein said ground station includes a packet organizer that groups IP packets based on an information data rate of said IP packets.

3. (original) The communication system of claim 1 wherein said ground station includes a forward error correction (FEC) encoder that applies FEC coding to said first and second IP packet data and wherein said VLO spreader communicates with an output of said FEC encoder.

4. (original) The communication system of claim 3 wherein said ground station includes a pseudonoise (PN) spreader that spreads an output of said VLO spreader.

5. (previously presented) The communication system of claim 4 wherein said first and second mobile platforms include a pseudonoise (PN) despreader that despreads data received on said forward link.

6. (original) The communication system of claim 5 wherein said first and second mobile platforms include a VLO despreader that despreads an output of said PN despreader.

7. (original) The communication system of claim 6 wherein said first and second mobile platforms include a FEC decoder that decodes an output of said PN despreader.

8. (original) The communication system of claim 7 wherein said ground station selects a first VLO spreading code to optimize a first desired link margin of said first transceiver and a second VLO spreading code is selected to optimize a second desired link margin of said second transceiver.

9. (original) The communication system of claim 8 wherein said first transceiver includes a feedback circuit that generates a link margin estimate for said first IP packet received by said first transceiver.

10. (original) The communication system of claim 9 wherein said ground station receives said link margin estimate and adjusts said information data rate of subsequent IP packets.

11. (original) The communication system of claim 10 wherein said feedback circuit of said first transceiver includes:

a signal estimator that generates a bit energy signal; and

a noise estimator that generates a noise estimate signal.

12. (original) The communication system of claim 11 wherein said feedback circuit transmits said link margin estimate to said ground station.

13. (original) The communication system of claim 12 wherein said ground station adjusts said VLO spreading code to optimize said link margin of said first transceiver.

14. (original) The communication system of claim 13 wherein said ground station adjusts said VLO spreading code and FEC coding of said FEC encoder to optimize said link margin of said first transceiver.

15. (original) The communication system of claim 13 wherein said VLO code despreader responds to VLO timing sequence data contained in an overhead portion of an output of said PN despreader.

16. (original) The communication system of claim 1 wherein said first IP packet is addressed to said first transceiver located on said first mobile platform and said second IP packet is addressed to said second transceiver located on a second mobile platform.

17. (original) The communication system of claim 1 wherein said forward link includes first and second broadcast frames that are transmitted concurrently.

18. (original) The communication system of claim 17 wherein said concurrent broadcast frames have distinct VLO codes and substantially the same signal strength.

19. (currently amended) A method for communicating with mobile platforms, comprising:

assigning a first Internet Protocol (IP) address to a first mobile platform including a first transceiver;

assigning a second IP address to a second mobile platform including a second transceiver;

transmitting a forward link that concurrently contains an entire first IP packet having a first information data rate and an entire second IP packet having a second information data rate from a ground station;

modulating said entire first IP packet with a first variable length orthogonal (VLO) code, using a VLO spreader, in combination with code division multiple access (CDMA) coding such that said entire first IP packet can be relayed, via said forward link, from a ground station to said first mobile platform through a selected channel of a satellite

having a transceiver amplifier operating approximately at a saturation point of said amplifier;

simultaneously modulating said entire second IP packet with a second VLO, using the VLO spreader, in combination with CDMA coding, ~~wherein said first and second IP packets have different information data rates~~ such that said entire second IP packet is relayed, via said forward link, from said ground station to said second mobile platform through said selected satellite channel with said satellite transceiver amplifier operating approximately at said saturation point;

~~modulating said first IP packet with said first VLO code such that said first transceiver is operated approximately at a saturation point of a first transceiver amplifier;~~

~~modulating said second IP packet with said second VLO code such that said second transceiver is operated approximately at a saturation point of a second transceiver amplifier;~~ and

~~relaying said forward link from said ground station to said first and second mobile platforms using a satellite.~~

20. (original) The method of claim 19 further comprising organizing IP packets at said ground station based on an information data rate of said IP packets.

21. (original) The method of claim 19 further comprising applying forward error correction (FEC) coding prior to said step of modulating.

22. (original) The method of claim 21 further comprising spreading an output of said VLO spreader using a pseudonoise (PN) spreader.

23. (original) The method of claim 22 further comprising despreading data received on said forward link using a PN despreader of said first and second mobile platforms.

24. (original) The method of claim 23 further comprising despreading an output of said PN despreader using a VLO despreader.

25. (original) The method of claim 24 further comprising decoding an output of said FEC decoder using a FEC decoder of said first and second mobile platforms.

26. (original) The method of claim 25 further comprising:

selecting a first VLO spreading code to optimize a first desired link margin of said first transceiver; and

selecting a second VLO spreading code to optimize a second desired link margin of said second transceiver.

27. (original) The method of claim 26 further comprising:

generating a link margin estimate for said first IP packet received by said first transceiver; and

transmitting said link margin estimate to said ground station.

28. (original) The method of claim 27 further comprising:

receiving said link margin estimate at said ground station; and adjusting said information data rate of said subsequent IP packets.

29. (original) The method of claim 28 wherein said step of generating said link margin estimate further comprises:

generating a bit energy signal; and

generating a noise estimate signal.

30. (original) The method of claim 29 further comprising adjusting said VLO spreading code to optimize said link margin of said first transceiver.

31. (original) The method of claim 29 further comprising adjusting said VLO spreading code and said FEC encoding to optimize said link margin of said first transceiver.

32. (original) The method of claim 30 further comprising responding to VLO timing sequence data contained in an overhead portion of an output of said PN despreader using said VLO decoder.

33. (original) The method of claim 32 further comprising:

addressing said first IP packet to said first transceiver located on said first mobile platform; and

addressing said second IP packet to said second transceiver located on a second mobile platform.

34. (original) The method of claim 19 wherein said forward link includes first and second broadcast frames that are transmitted concurrently.

35. (original) The method of claim 34 wherein said concurrent broadcast frames have distinct VLO codes and substantially the same signal strength.